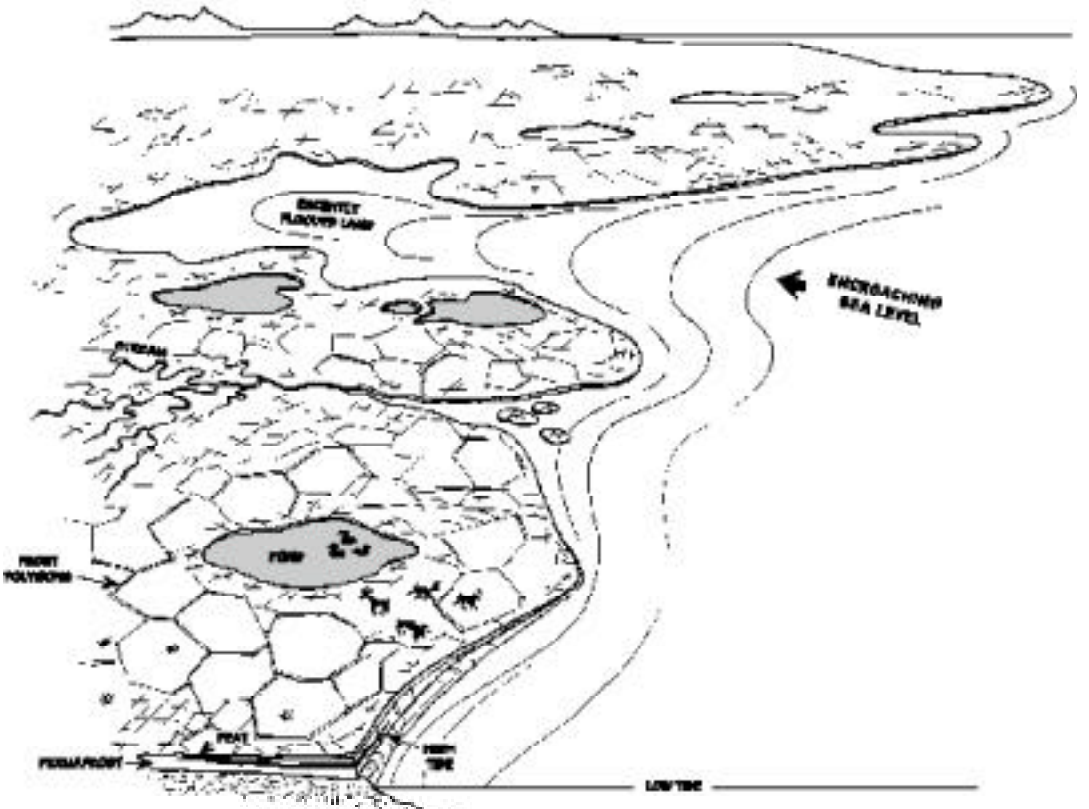
Inundated Lowland Tundra

INTERTIDAL



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Description

- This shoreline type occurs where very low-lying sections of the Arctic shoreline have been recently flooded by the sea, due to subsidence.
- Also includes areas that are not normally in the intertidal zone but can be frequently inundated by salt water during spring tides or wind-induced surges.
- They have complex and convoluted shorelines comprised of tundra, vegetated flats, river banks, peat mats, brackish lagoons, and small streams.
- These shorelines have high ice content; the surface material is mostly peat with little mineral sediments.
- Where present, the vegetation is salt-tolerant and may be more adapted to drier conditions than the salt marshes.
- The tundra is a living plant community and provides important feeding areas for migrating birds in the summer.

Predicted Oil Behavior

- Oil could be stranded onshore only during the ice-free summer season.
- During storm surges, spilled oil could strand hundreds of meters inland.
- During the summer months, the surface sediments/peat deposits are usually water-saturated, so stranded oil is likely to remain on the surface.
- Physical removal rates of medium to heavy oils will be slow.

Response Considerations

- In summer, the substrate will be too soft to support foot or vehicular traffic; any work will require construction of walkways or roads.
- In winter, such work will be less damaging when the load-bearing capacity of these low-lying areas is increased.
- Excessive physical disruption can completely alter the substrate, hydrology, and vegetation patterns for many years.
- Avoid raking and trampling oil into living plants.
- Peat may be used as a natural sorbent; sorption will be more effective with liquid and fresh oils.
- Low-pressure, ambient-water flood and/or flushing could raise the local water table to float and direct oil towards a boomed area for collection.
- If salt-tolerant species are present, seawater may be used; use fresh water only if freshwater species are present.
- Consider burning only where there is an insulating water layer to protect roots and prevent deeper penetration into the substrate. Peat with a high water content may make burning ineffective, leaving a persistent surface residue that is more difficult to remove than the spilled oil.

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Oil Category Descriptions

I – Gasoline products
II – Diesel-like products and light crudes
III – Medium grade crudes and intermediate products
IV – Heavy crudes and residual products
V – Non-floating oil products

The following categories are used to compare the relative environmental impact of each response method in the specific environment and habitat for each oil type. The codes in each table mean:

A = The least adverse habitat impact.
B = Some adverse habitat impact.
C = Significant adverse habitat impact.
D = The most adverse habitat impact.
I = Insufficient information - impact or effectiveness of the method could not be evaluated.
— = Not applicable.

Response Method	Oil Category I	II	III	IV	V
Natural Recovery	A	A	A	B	B
Barriers/Berms	–	–	–	–	–
Manual Oil Removal/Cleaning	D	C	C	C	C
Mechanical Oil Removal	D	D	C	C	C
Sorbents	–	C	C	C	–
Vacuum	–	B	B	B	C
Debris Removal	–	C	C	C	C
Sediment Reworking/Tilling	–	–	–	–	–
Vegetation Cutting/Removal	D	D	D	D	D
Flooding (deluge)	C	C	C	D	–
Low-pressure, Ambient Water Flushing	–	D	D	–	–
High-pressure, Ambient Water Flushing	–	–	–	–	–
Low-pressure, Hot Water Flushing	–	–	–	–	–
High-pressure, Hot Water Flushing	–	–	–	–	–
Steam Cleaning	–	–	–	–	–
Sand Blasting	–	–	–	–	–
Solidifiers	–	C	C	–	–
Shoreline Cleaning Agents	–	–	–	–	–
Nutrient Enrichment	–	I	I	I	I
Natural Microbe Seeding	–	I	I	I	I
In-situ Burning	–	C	C	C	–

Consult the *Environmental Considerations for Marine Oil Spill Response* document referenced on page 5 before using this table.